

What is claimed is:

Sub 35 > 1. An EPO production system comprising:

a DNA encoding EPO;

a vector for receiving the DNA; and

an avian cell for harboring the vector.

2. The EPO production system of claim 1, wherein the avian cell is DE or CEF or QT.

Sub 36 > 3. The EPO production system of claim 2, wherein the QT is QT-VC.

4. The EPO production system of claim 1, wherein the DNA is a genomic DNA encoding EPO.

Sub 37 > 5. The EPO production system of claim 1, wherein the DNA encoding EPO is selected from the group consisting of SY, JM, SH and HE described in Fig. 5.

6. The production system of claim 1, wherein the vector contains a promoter selected from the group consisting of SV40 early promoter, HCMV MIEP and RSV LTR.

Sub 38 > 7. A method of producing EPO comprising the steps of:

inserting a DNA encoding an EPO into a vector;

transfecting the vector into an avian cell; and

culturing the transfected avian cell in media.

8. The method of claim 7, wherein the avian cell is DE or CEF or QT.

Sub 39 > 9. The method of claim 8, wherein the QT is QT-VC.

10. The method of claim 7, wherein the DNA encoding EPO is a genomic DNA.

Sub 40 > 11. The method of claim 7, wherein the DNA encoding the EPO is

*Sub 810* selected from the group consisting of SY, JM, SH and HE described in Fig. 5.

12. The method of claim 7, wherein the vector contains a promoter selected from the group consisting of SV40 early promoter, RSV LTR and HCMV MIEP.

*Sub 811* 13. An EPO genomic sequence selected from the group consisting of SY, JM, SH and HE described in Fig. 5.

14. An EPO amino acid sequence selected from the group consisting of JM, SH and HE described in Fig. 6.

15. An avian cell as a host for expressing a gene encoding an EPO.

16. The avian cell of claim 15, wherein the avian cell is DE or CEF or QT.

*Sub 812* 17. The avian cell of claim 16, wherein the QT is QT-VC.

*Sub 813* 18. A human heterologous protein production system comprising:

a DNA encoding a human heterologous protein;

a vector for receiving the DNA; and

an avian cell for harboring the vector.

*Sub 814* 19. The human heterologous protein production system of claim 18, wherein the human heterologous protein is selected from the group consisting of TPA, Factor VIII and EPO.

20. A method of producing a human heterologous protein comprising the steps of:

inserting a DNA encoding a human heterologous protein into a vector;

transfecting the vector into an avian cell; and

culturing the transfected avian cell in media.

21. The method of claim 20, wherein the human heterologous protein is selected from the group consisting of TPA, Factor VIII and EPO.